

HEARING EXHIBIT NO. 9

(Merits Hearing of 4/3-4/2018)

In the matter of Docket No. 2017-292-WS:
Application of Carolina Water Service, Incorporated,
for Approval of an Increase in Its Rates
for Water and Sewer Services

I hereby certify this document to be a
true copy of the original.

Jacelyn Boyd
Chief Clerk

Date 8/30/18



Carolina Water Service, Inc.
Corrected DCF Cost Rate Reflecting only Expected Growth in Earnings per Share

Company	VL Projected EPS Growth (1)			Zacks	Yahoo! Finance	Dividend Yield (2)
	2017	Estimate	Growth	LT EPS Growth	LT EPS Growth	
American States	\$ 1.85	\$ 2.35	7.07%	5.00%	4.00%	1.90%
American Water	3.00	4.15	9.71%	7.50%	8.20%	2.00%
Aqua America	1.36	1.85	9.19%	6.00%	5.00%	2.20%
Artesian Resources	NA	1.24	5.16%	NA	4.00%	2.50%
California Water	1.40	1.85	8.29%	6.00%	9.80%	1.60%
Connecticut Water	2.20	2.90	8.21%	6.00%	6.00%	2.10%
Global Water Resources	N/A	N/A	N/A	15.00%	15.00%	3.10%
Middlesex Water	1.40	2.10	12.28%	NA	2.70%	2.30%
SJW	2.60	3.45	8.42%	NA	14.00%	1.40%
York Water	1.05	1.60	12.79%	NA	4.90%	2.00%
		Mean	9.01%	7.58%	7.36%	2.11%
		Median	8.42%	6.00%	5.50%	
		Average	8.72%	6.79%	6.43%	
		Growth Rate (3)		7.31%		
		Dividend Yield		2.11%		
		Adjusted Dividend Yield (4)		0.15%		
		Indicated DCF Cost of Equity		9.57%		

NA = Not Available

Notes:

- (1) From Revised Exhibit DHC-5, pages 2 and 3.
- (2) From Revised Exhibit DHC-9.
- (3) Average of *Value Line*, Zacks, and Yahoo! Finance growth rates.
- (4) Growth rate multiplied by the dividend yield.

Carolina Water Service, Inc.
Corrected CAPM Reflecting the Long-Term Arithmetic Mean
Market Return and Application of the ECAPM

Line No.

1.	Market Return (1)	11.80%
2.	Risk-Free Rate (2)	3.70%
3.	Equity Risk Premium (3)	8.10%
4.	Beta (4)	<u>0.75</u>
5.	CAPM Cost of Equity (5)	<u>9.78%</u>
6.	ECAPM Cost of Equity (6)	<u>10.28%</u>
7.	Average	<u>10.03%</u>

Notes:

- (1) From page 7-13 of SBBI - 2017.
- (2) From Revised Exhibit DHC-2.
- (3) Line 1 - Line 2.
- (4) From Revised Exhibit DHC-13, page 1.
- (5) Line 2 + (Line 3 x Line 4).
- (6) Line 2 + (0.75 x (Line 3 x Line 4)) + (0.25 x Line 3).

<u>Company</u>	<u>R-Squared</u>
American States	0.1292
American Water	0.1525
Aqua America	0.1702
Artesian Resources	0.0547
Calidornia Water	0.1732
Connecticut Water	0.1073
Global Water Resources	NA
Middlesex Water	0.1439
SJW	0.1206
York Water	0.1366
Average	0.1320
Median	0.1366

Source of Information:

Value Line Proprietary Database December 2017

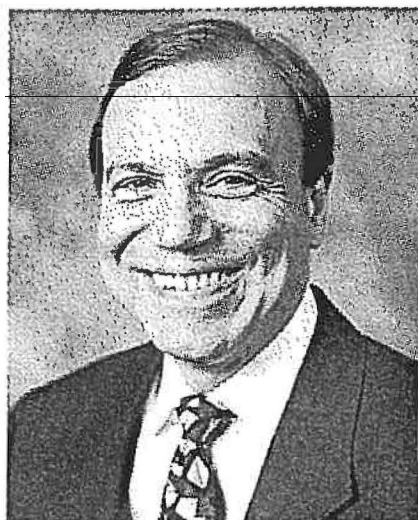
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Comparable Earnings: New Life for an Old Precept

by
Frank J. Hanley
Pauline M. Ahern

Accelerating deregulation has greatly increased the investment risk of natural gas utilities. As a result, the authors believe it more appropriate than ever to employ the comparable earnings model. We believe our application of the model overcomes the greatest traditional objection to it — lack of comparability of the selected non-utility proxy firms. Our illustration focuses on a target gas pipeline company with a beta of 0.96 — almost equal to the market's beta of 1.00.



The comparable earnings model used to determine a common equity cost rate is deeply rooted in the standard of "corresponding risk" enunciated in the landmark *Bluefield* and *Hope* decisions of the U.S. Supreme Court.¹ With such solid grounding in the foundations of rate of return regulation, comparable earnings should be accepted as a principal model, along with the currently popular market-based models, provided that its most common criticism, non-comparability of the proxy companies, is overcome.

Frank J. Hanley is president of AUS Consultants — Utility Services Group. He has testified in several hundred rate proceedings on the subject of cost of capital before the Federal Energy Regulatory Commission and 27 state regulatory commissions. Before joining AUS in 1971, he was an assistant treasurer of a number of operating companies in the American Water Works System, as well as a financial planning officer with the Philadelphia National Bank. He is a Certified Rate of Return Analyst.

Pauline M. Ahern is a senior financial analyst with AUS Consultants — Utility Services Group. She has participated in many cost-of-capital studies. A former employee of the U.S. Department of the Treasury and the Federal Reserve Bank of Boston, she holds an MBA degree from Rutgers University and is a Certified Rate of Return Analyst.

As stated in *Bluefield* in 1922: "A public utility is entitled to such rates as will permit it to earn a return ... on investments in other business undertakings which are attended by corresponding risks and uncertainties ..."

In addition, the court stated in *Hope* in 1944: "By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks."

cept of *Bluefield* and *Hope* predates the use of such market-based cost-of-equity models as the Discounted Cash Flow (DCF) and Capital Asset Pricing (CAPM), which were developed later and are currently popular in rate-base/rate-of-return regulation. Consequently, the comparable earnings model has a longer regulatory and judicial history. However, it has far greater relevance now than ever before in its history because significant deregulation has substantially increased natural gas utilities' investment risk to a level similar to that of non-utility firms. As a result, it is

Carolina Water Service, Inc.
Selection of Non-Price Regulated Group Similar in Risk to
Dr. Carlisle's Water Proxy Group

Dr. Carlisle's Water Proxy Group

Ticker	Company Name	Unadjusted Beta	Standard Error of the Regression
AWR	Amer. States Water	0.56	2.7946
AWK	Amer. Water Works	0.42	1.9373
WTR	Aqua America	0.50	2.1431
ARTNA	Artesian Res Corp	0.37	2.9852
CWT	California Water	0.58	2.4397
CTWS	Conn. Water Services	0.45	2.5093
GWRS	Global Water Resourc	NA	NA
MSEX	Middlesex Water	0.56	2.6567
SJW	SJW Group	0.55	2.8737
YORW	York Water Co. (The)	0.58	2.8013
	Range Unadjusted Beta	0.37	0.58
	Range Standard Error of Regression	1.9373	2.9852

Comparable Risk Non-Price Regulated Group

Ticker	Company Name	Unadjusted Beta	Standard Error of the Regression
AZO	AutoZone Inc.	0.55	2.2083
CBOE	CBOE Holdings	0.49	2.5086
CPB	Campbell Soup	0.49	2.1673
DNKN	Dunkin' Brands Group	0.53	2.8822
DPS	Dr Pepper Snapple	0.55	1.9555
FORR	Forrester Research	0.58	2.7464
HRL	Hormel Foods	0.57	2.2989
HSY	Hershey Co.	0.49	2.2615
KMB	Kimberly-Clark	0.50	1.9767
MCY	Mercury General	0.52	2.4935
SJM	Smucker (J.M.)	0.50	2.1906
WMT	Wal-Mart Stores	0.43	2.1287

NA = Not Available

Source of Information:

Value Line Proprietary Database December 2017

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Principal Methods	Dr. Carlisle's Non-Price Regulated Group
Discounted Cash Flow Model (DCF) (1)	14.66%
Capital Asset Pricing Model (CAPM) (2)	9.85%
Average	12.26%

(1) From page 2 of this Schedule.
(2) From page 3 of this Schedule.

Carolina Water Service, Inc.
Indicated DCF Cost Rate for Dr. Carlisle's Non-Price Regulated Group

	VL Projected EPS Growth			Zacks	Yahoo! Finance	Dividend
	2017	Estimate	Growth	LT EPS Growth	LT EPS Growth	Yield
AutoZone, Inc.	\$ 44.07	\$ 78.00	17.72%	12.70%	11.68%	NA
CBOE Holdings, Inc.	2.40	5.75	28.36%	17.60%	17.90%	0.90%
Campbell Soup Company	3.04	3.50	4.11%	5.30%	3.75%	3.00%
Dunkin' Brands Group, Inc.	2.43	4.50	19.25%	13.40%	13.86%	2.40%
Dr. Pepper Snapple Group	4.50	6.20	9.59%	10.70%	10.64%	2.50%
Forrester Research, Inc.	1.22	2.00	15.17%	12.00%	12.00%	2.00%
Hormel Foods Corporation	1.57	2.50	14.22%	9.30%	0.53%	2.10%
The Hershey Company	4.85	6.45	8.49%	8.70%	9.62%	2.30%
Kimberly-Clark	6.20	7.75	6.58%	7.90%	7.61%	3.30%
Mercury General	1.63	5.00	37.75%	25.30%	25.30%	5.40%
The J.M. Smucker Co.	7.00	9.40	8.79%	7.90%	10.10%	2.50%
Wal-Mart Stores, Inc.	4.43	6.50	11.58%	5.80%	7.10%	2.10%
		Mean	15.13%	11.38%	10.84%	2.59%
		Median	12.90%	10.00%	10.37%	
		Average	14.01%	10.69%	10.61%	
		Growth (1)		11.77%		
		Dividend Yield		2.59%		
		Dividend Growth (2)		0.30%		
		Indicated DCF Cost of Equity		14.66%		

NA = Not Available

Sources of Information:

Value Line Investment Survey
Zacks Investment Service
Yahoo! Finance

Carolina Water Service, Inc.
Indicated CAPM Cost Rate for
Dr. Carlisle's Non-Price Regulated Group

Line No.

1.	Market Return (1)	11.80%
2.	Risk-Free Rate (2)	3.70%
3.	Equity Risk Premium (3)	8.10%
4.	Beta (4)	<u>0.725</u>
5.	CAPM Cost of Equity (5)	<u>9.57%</u>
6.	ECAPM Cost of Equity (6)	<u>10.13%</u>
7.	Average	<u>9.85%</u>

Notes:

- (1) From page 7-13 of SBBI - 2017.
- (2) From Revised Exhibit DHC-2.
- (3) Line 1 - Line 2.
- (4) From page 4 of this Schedule.
- (5) Line 2 + (Line 3 x Line 4).
- (6) Line 2 + (0.75 x (Line 3 x Line 4)) + (0.25 x Line 3).

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<u>Company Name</u>	<u>Beta</u>
AutoZone, Inc.	0.80
CBOE Holdings, Inc.	0.70
Campbell Soup Company	0.70
Dunkin' Brands Group, Inc.	0.60
Dr. Pepper Snapple Group	0.75
Forrester Research, Inc.	0.70
Hormel Foods Corporation	0.75
The Hershey Company	0.75
Kimberly-Clark	0.75
Mercury General	0.80
The J.M. Smucker Co.	0.70
Wal-Mart Stores, Inc.	0.70
Average	<u>0.725</u>

Source of Information
Value Line Investment Survey - Standard Edition